TU

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/676,727	09/29/2000	Francis X. Canning	CANNING.001A	2872

20995 7590 01/26/2007
KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

EXAMINER	
DAY, HERNG DER	

ART UNIT	PAPER NUMBER
2128	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	01/26/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 01/26/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com
eOAPilot@kmob.com

Office Action Summary	Application No.	Applicant(s)
	09/676,727	CANNING, FRANCIS X.
	Examiner	**Art Unit**
	Herng-der Day	2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22,34-37 and 39-54* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22, 34-37 and 39-54* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/13/06*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1. This communication is in response to Applicant's Amendments and Response ("Amendment") to Office Action dated August 24, 2006, mailed November 13, 2006.

1-1. Claims 1, 2, 10, and 39 have been amended. Claim 38 has been canceled. Claims 1-22, 34-37, and 39-54 are pending.

1-2. Claims 1-22, 34-37, and 39-54 have been examined and rejected.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 39 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3-1. Claim 39 recites the limitation, "wherein said composite sources are substantially similar in functional form to said composite testers" in lines 3-4 of the claim, which is unclear and indefinite regarding the meaning of "substantially similar in functional form". For the purpose of claim examination, the Examiner will interpret "wherein said composite sources are substantially similar in functional form to said composite testers" as "wherein both composite sources and composite testers are constructed as a linear combination of their corresponding original sources and original testers".

17

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 1-22, 34-37, and 39-54 are rejected under 35 U.S.C. 101 because the inventions as disclosed in claims are directed to non-statutory subject matter.

5-1. Claims 1-22, 34-37, and 39-54 are directed to the manipulation of abstract ideas of data compression, calculating composite sources and testers, and transforming equations. This claimed subject matter lacks a practical application of a judicial exception (law of nature, abstract idea, naturally occurring article/phenomenon) since it fails to produce a useful, concrete, and tangible result.

Specifically, the claimed subject matter does not produce a tangible result because the claimed subject matter fails to produce a result that is limited to having real world value rather than a result that may be interpreted to be abstract in nature as, for example, a thought, a computation, or manipulated data. More specifically, the claimed subject matter provides for transforming a system of linear equations to use the composite sources and the composite testers to produce a second system of equations. This produced result remains in the abstract and, thus, fails to achieve the required status of having real world value.

5-2. The Examiner acknowledges that even though the claims are presently considered non-statutory they are additionally rejected below over the prior art. The Examiner assumes the Applicant will amend the claims to overcome the 101 rejections and thus make the claims statutory.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-22, 34-37, and 39-54 are rejected under 35 U.S.C. 102(b) as being anticipated by Canning et al., Rockwell Inst. Sci. Center, "Fast Direct Solution of Standard Moment-Method Matrices", IEEE Antennas and Propagation Magazine, June 1998, pages 15-26, hereafter referred to as Rockwell.

7-1. Regarding claim 1, Rockwell discloses a method of data compression, comprising:

partitioning a first set of basis functions into groups, each group corresponding to a region, each basis function corresponding to one unknown in a system of linear equations, each of said basis functions corresponding to an original source (basis functions, page 16, left column, paragraph 1);

selecting a plurality of spherical angles (angle, page 15, right column, the last paragraph);

using a computer system, calculating a far-field disturbance produced by each of said basis functions in a first group for each of said spherical angles to produce a matrix of transmitted disturbances (matrix A, page 15, right column, the last paragraph);

reducing a rank of said matrix of transmitted disturbances to yield a second set of basis functions, said second set of basis functions corresponding to composite sources, each of said composite sources comprising a linear combination of a number N of said original basis functions (the SVD of A, page 16, left column, the last paragraph);

partitioning a first set of weighting functions into groups, each group corresponding to one of said regions, each weighting function corresponding to a condition, each of said weighting functions corresponding to an original tester (testing functions, page 16, left column, paragraph 1);

using a computer system, calculating a far-field disturbance received by each of said testers in a first group for each of said spherical angles to produce a matrix of received disturbances (matrix A, page 15, right column, the last paragraph);

reducing a rank of said matrix of received disturbances to yield a second set of weighting functions, said second set of weighting functions corresponding to composite testers, each of said composite testers comprising a linear combination of a number M of said original testers (the SVD of A, page 16, left column, the last paragraph), wherein at least one of either M or N is greater than one (the SVD of A, page 16, left column, the last paragraph); and

transforming said system of linear equations to use said composite sources and said composite testers to produce a second system of equations wherein at least a portion of said second system of equations is compressed relative to said system of linear equations and wherein for at least a first portion of said second system of equations, said first portion using said composite sources and said composite testers, at least a portion of said matrix of transmitted disturbances is different from said matrix of received disturbances (a fast sparse solution, page 16, left column, the last paragraph).

7-2. Regarding claim 2, Rockwell discloses a method of data compression, comprising:

partitioning a first set of basis functions into groups, each group corresponding to a region, each basis function corresponding to an unknown in a system of equations, each of said

basis functions corresponding to an original source (basis functions, page 16, left column, paragraph 1);

selecting a first plurality of angular directions (angle, page 15, right column, the last paragraph);

using a computer system, calculating a disturbance produced by each of said basis functions in a first group for each of said angular directions to produce a matrix of disturbances (matrix A, page 15, right column, the last paragraph);

using said matrix of disturbances to compute a second set of basis functions, said second set of basis functions corresponding to composite sources, wherein at least one of said composite sources is configured to produce a relatively weak disturbance from a portion of space around said at least one composite source (the SVD of A, page 16, left column, the last paragraph);

partitioning a first set of weighting functions into groups, each group corresponding one of said regions, each weighting function corresponding to a condition, each of said weighting functions corresponding to an original tester (testing functions, page 16, left column, paragraph 1);

using a computer system, calculating a disturbance received by each of said testers in a second plurality of angular directions to produce a matrix of received disturbances (matrix A, page 15, right column, the last paragraph);

using said matrix of received disturbances to compute a second set of weighting functions, said second set of weighting functions corresponding to composite testers, wherein at least one of said composite testers is configured to weakly receive disturbances from a portion of

space relative to said at least one composite tester (the SVD of A, page 16, left column, the last paragraph); and

transforming at least a first portion of said system of equations into a transformed system of equations to use one or more of said composite sources and one or more of said composite testers wherein at least a second portion of said transformed system of equations is compressed relative to said system of equations (a fast sparse solution, page 16, left column, the last paragraph).

7-3. Regarding claim 3, Rockwell further discloses said matrix of disturbances is a moment method matrix (MoM matrix, page 16, left column, paragraph 3).

7-4. Regarding claim 4, Rockwell further discloses said step of using said matrix of disturbances to compute a second set of basis functions comprises reducing a rank of said matrix of disturbances (the SVD of A, page 16, left column, the last paragraph).

7-5. Regarding claim 5, Rockwell further discloses said step of using said matrix of received disturbances to compute a second set of weighting functions comprises reducing a rank of said matrix of received disturbances (the SVD of A, page 16, left column, the last paragraph).

7-6. Regarding claim 6, Rockwell further discloses said disturbance is at least one of an electromagnetic field, a heat flux, an electric field, a magnetic field, a vector potential, a pressure, a sound wave, a particle flux, a weak nuclear force, a strong nuclear force, and a gravity force (electromagnetic interference, page 15, left column, the last paragraph).

7-7. Regarding claim 7, Rockwell further discloses said first plurality of directions is substantially the same as said second plurality of directions (angle, page 15, right column, the last paragraph).

7-8. Regarding claim 8, Rockwell further discloses said regions of space around said at least one composite source are far-field regions (these regions are not physically close to each other at any point, page 15, right column, the last second paragraph).

7-9. Regarding claim 9, Rockwell further discloses said at least a portion of a region around said at least one composite tester is a far-field region (these regions are not physically close to each other at any point, page 15, right column, the last second paragraph).

7-10. Regarding claim 10, Rockwell discloses a method of data compression, comprising:

calculating one composite source as a linear combination of more than one basis function, wherein at least one of said composite sources is configured to produce a relatively weak disturbance in a portion of space related to said at least one composite source (basis functions, page 16, left column, paragraph 1; the SVD of A, page 16, left column, the last paragraph);

using a computer system, calculating one composite tester as a linear combination of more than one weighting function, wherein at least one of said composite testers is configured to be relatively weakly affected by disturbances propagating from a portion of space around said at least one composite tester (testing functions, page 16, left column, paragraph 1; the SVD of A, page 16, left column, the last paragraph); and

transforming at least a portion of a first system of equations based on said basis functions and said weighting functions into a second system of equations based on said composite sources and said composite testers, wherein for an element of said second equations one of said one or more composite sources and one of said one or more composite testers are computed using at least partially different data, and wherein said second equations are compressed relative to said first system of equations (a fast sparse solution, page 16, left column, the last paragraph).

7-11. Regarding claim 11, Rockwell further discloses said disturbance is at least one of, an electromagnetic field, a heat flux, an electric field, a magnetic field, vector potential, a pressure, a sound wave, a particle flux, a weak nuclear force, strong nuclear force, and a gravity force (electromagnetic interference, page 15, left column, the last paragraph).

7-12. Regarding claims 12-16, Rockwell further discloses a technique applies not only to antenna and propagation problem, but also to all electromagnetic problems. It can be applied to matrices coming from nearly all integral-equation formulations and other linear wave phenomena (page 15, left column, the last paragraph through right column, paragraph 1).

7-13. Regarding claim 17, Rockwell further discloses each of said composite sources corresponds to a region (region, page 15, right column, the last second paragraph).

7-14. Regarding claim 18, Rockwell further discloses said second system of equations is described by a sparse block diagonal matrix (sparse representation, page 16, left column, paragraph 4).

7-15. Regarding claim 19, Rockwell further discloses comprising the step of reordering said sparse block diagonal matrix to shift relatively larger entries in said matrix towards a desired corner of said matrix (to arrange the singular values in decreasing order, page 17, left column, paragraph 1).

7-16. Regarding claim 20, Rockwell further discloses comprising the step of solving said second system of equations (a fast sparse solution, page 16, left column, the last paragraph).

7-17. Regarding claim 21, Rockwell further discloses comprising the step of solving said second system of equations to produce a first solution vector, said first solution vector expressed in terms of said composite testers (vector, page 18, left column, paragraph 1).

7-18. Regarding claim 22, Rockwell further discloses comprising the step of transforming said first solution vector into a second solution vector, said second solution vector expressed in terms of said weighting functions (orthogonalized version, page 18, left column, paragraph 2).

7-19. Regarding claim 34, Rockwell further discloses said transforming said system of linear equations produces a substantially sparse system of linear equations.

7-20. Regarding claim 35, Rockwell further discloses N is greater than one and M is greater than one (SVD is used to calculate the low-rank approximation to block A and from equation (3) at page 16, left column, each row or column of matrix D is a linear combination of corresponding rows or columns of matrix A).

7-21. Regarding claim 36, Rockwell further discloses said transforming said system of linear equations produces a substantially sparse system of linear equations (a sparse representation of Z, page 16, left column, paragraph 4).

7-22. Regarding claim 37, Rockwell further discloses said matrix of transmitted disturbances is substantially different from said matrix of received disturbances (many fewer than m degree of freedom are needed to described this interaction. Of course, to a different observation region, different degree of freedom will be necessary, page 15, right column, the last paragraph).

7-23. Regarding claim 39, Rockwell further discloses wherein said matrix of transmitted disturbances is a rectangular matrix having a different number of rows and columns, and wherein said composite sources are substantially similar in functional form to said composite testers (The matrix A will be n by m, page 15, right column, the last paragraph; a linear combination of the original m (n) source (testing) functions for block A, page 16, left column, paragraph 2).

7-24. Regarding claim 40, Rockwell further discloses said matrix of received disturbances comprises a moment-method matrix (MoM matrix, page 16, left column, paragraph 3).

7-25. Regarding claim 41, Rockwell further discloses said matrix of transmitted disturbances comprises a moment-method matrix (MoM matrix, page 16, left column, paragraph 3).

7-26. Regarding claim 42, Rockwell further discloses said matrix of received disturbances comprises a moment-method matrix (MoM matrix, page 16, left column, paragraph 3).

7-27. Regarding claim 43, Rockwell further discloses said transforming at least a portion of said system of equations to use one or more of said composite sources and one or more of said composite testers comprises transforming substantially all of said system of equations to use one or more of said composite sources and one or more of said composite testers (a fast sparse solution, page 16, left column, the last paragraph).

7-28. Regarding claim 44, Rockwell further discloses said transforming substantially all of said system of equations produces substantial sparseness (a sparse representation of Z, page 16, left column, paragraph 4).

7-29. Regarding claim 45, Rockwell further discloses said relatively weak disturbance from a portion of space around said at least one composite source comprises a relatively weak disturbance from a far-field portion of space (the radiated field decays quickly for angles passing through successive sidelobes, page 18, right column, paragraph 1).

7-30. Regarding claim 46, Rockwell further discloses said relatively weak disturbance from a portion of space around said at least one composite source comprises a portion of space at distances relatively shorter than a distance to other physical regions (the radiated field decays quickly for angles passing through successive sidelobes, page 18, right column, paragraph 1).

7-31. Regarding claim 47, Rockwell further discloses said portion of space at distances relatively shorter than a distance to other physical regions comprises a relatively non-intertwining portion of space (many fewer than m degree of freedom are needed to described this interaction. Of course, to a different observation region, different degree of freedom will be necessary, page 15, right column, the last paragraph).

7-32. Regarding claim 48, Rockwell further discloses said relatively weak disturbance from a portion of space around said at least one composite source comprises a portion of space comprising substantially all angular directions in said first plurality of angular directions (m sources are used to describe radiation in all directions and for all distances, page 15, right column, the last paragraph).

7-33. Regarding claim 49, Rockwell further discloses said portion of space comprising substantially all angular directions in said first plurality of angular directions comprises a relatively non-intertwining portion of space (many fewer than m degree of freedom are needed to described this interaction. Of course, to a different observation region, different degree of freedom will be necessary, page 15, right column, the last paragraph).

7-34. Regarding claim 50, Rockwell further discloses said transforming at least a portion of a first system of equations comprises transforming substantially all of a first system of equations based on said basis functions and said weighting functions into a second system of equations based on said composite sources and said composite testers (the SVD of A, page 16, left column, the last paragraph).

7-35. Regarding claim 51, Rockwell further discloses said second system of equations is substantially sparse (if p<<n, this is a sparse representation of A, page 17, left column, paragraph 3).

7-36. Regarding claim 52, Rockwell further discloses wherein said at least a portion of a first system of equations comprises an interaction between at least one of said basis functions is relatively close to and at least one of said weighting functions (the interaction of these two regions will be described by a retangular piece of Z, page 15, right column, paragraph 4).

7-37. Regarding claim 53, Rockwell further discloses wherein either said one or more composite sources is calculated using a matrix of transmitted disturbances or said one or more composite testers is calculated using a matrix of received disturbances (the SVD of A, page 16, left column, the last paragraph).

7-38. Regarding claim 54, Rockwell further discloses wherein either said one or more composite sources is calculated using a matrix of transmitted disturbances or said one or more composite testers is calculated using a matrix of received disturbances (the SVD of A, page 16, left column, the last paragraph).

Applicant's Arguments

8. Applicant argues the following:

8-1. Response to Rejection of Claim 38 Under 35 U.S.C. 112, First paragraph

(1) "Claim 38 has been canceled." (page 10, paragraph 3, Amendment).

8-2. Response to Rejection of Claim 39 Under 35 U.S.C. 112, Second paragraph

(2) "Claim 39 has been amended to more particularly point out and distinctly claims the subject matter Applicant regards as the invention." (page 10, paragraph 4, Amendment).

8-3. Response to Rejection of Claims 1-21 and 34-54 Under 35 U.S.C. 101

(3) "Applicant has amended Claims 1, 2, and 10 to clarify that the results are compressed and thus, the claims recite a concrete, useful, tangible, result; namely, reducing the physical computer resources used for a system of equations." (page 10, paragraph 6, Amendment).

8-4. Response to Rejection of Claims 1-21, 34-37 and 40-54 Under 35 U.S.C. 102(b)

(4) "The present application teaches how to produce results other than those of Rockwell. For example, in the case of the one by three matrix A discussed above, reducing a rank using an SVD or using other methods can produce three or more non trivial vectors, any of which can be used." (page 12, paragraph 2, Amendment).

(5) "Applicant respectfully submits that the Examiner's arguments do not overcome Applicant's arguments that "Rockwell does not teach or suggest that a second set of basis functions and a second set of weighting functions are to be obtained by separate rank reductions."" (page 14, paragraph 1, Amendment).

(6) Rockwell does not teach or suggest claims 1-22, 34-37, and 39-51 (pages 15-20, Amendment).

Response to Arguments

9. Applicant's arguments have been fully considered.

9-1. Applicant's argument (1) is persuasive. The rejections of claim 38 under 35 U.S.C. 112, first paragraph, in Office Action dated August 24, 2006, have been withdrawn.

9-2. Applicant's argument (2) is not persuasive. Claim 39 is currently rejected under 35 U.S.C. 112, second paragraph, as detailed in section **3-1** above because the meaning of "substantially similar in functional form" is unclear and indefinite.

9-3. Applicant's argument (3) is not persuasive. Claims 1-22, 34-37, and 39-54 are currently rejected under 35 U.S.C. 101 as detailed in section **5-1** above because the claimed subject matter does not produce at least a tangible result.

9-4. Applicant's arguments (4)-(5) are not persuasive. Applicant disclosed in the specification at page 15, lines 3-16, "Each composite source is typically a linear combination of one or more of the original sources. A matrix method is used to find composite sources that broadcast strongly and to find composite sources that broadcast weakly. These composite sources are constructed from the original sources. The matrix method used to find composite sources can be a rank-revealing factorization such as singular value decomposition. For a singular value decomposition, the unitary transformation associated with the sources gives the composite sources as a linear combination of sources. Variations of the above are possible. For example, one can apply the singular value decomposition to the transpose of the s matrix. One can employ a Lanczos Bi-diagonalization, or related matrix methods, rather than a singular value decomposition. There are other known methods for computing a low rank approximation to a matrix. Some examples of the use of Lanczos Bidiagonalization are given in Francis Canning and Kevin Rogovin, "Fast Direct Solution of Standard Moment-Method Matrices," IEEE AP Magazine, Vol. 40, No. 3, June 1998, pp. 15-26." and at page 16, lines 15-19, "A matrix method is used to construct composite testers that receive strongly and testers that receive weakly. The matrix method can be a rank-revealing factorization such as singular value decomposition. A

singular value decomposition gives the composite testers as a linear combination of the testers which had been used in the original matrix description." Accordingly, Applicant admitted the matrix method used to find composite sources and composite testers can be a rank-revealing factorization such as singular value decomposition and specifically referred to Rockwell's Lanczos Bi-diagonalization method. In other words, applying Rockwell's teaching as well as other known methods for computing a low rank approximation to a matrix in order to use Applicant's invention is well known to one of ordinary skilled in the art or at least is suggested by the Applicant. If one of ordinary skilled in the art cannot apply Rockwell's teaching to practice the claimed limitations of reducing matrix rank a potential enablement issue may be raised.

9-5. Applicant's argument (6) is not persuasive. Claims 1-22, 34-37, and 39-54 are rejected under 35 U.S.C. 102(b) as detailed in sections **7** to **7-38** above.

Conclusion

10. THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Herng-der Day whose telephone number is (571) 272-3777. The Examiner can normally be reached on 9:00 - 17:30.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: (571) 272-2100.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kamini S. Shah can be reached on (571) 272-2279. The fax phone numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Herng-der Day
January 22, 2007 H. D.

KAMINI SHAH
SUPERVISORY PATENT EXAMINER